(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
23 October 2003 (23.10.2003)

PCT

(10) International Publication Number
WO 03/087032 A1

(51) International Patent Classification[7]: C07C 69/734, 259/10, A01N 37/50, C07C 67/343

(21) International Application Number: PCT/EP03/03784

(22) International Filing Date: 11 April 2003 (11.04.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
MI2002A000814 17 April 2002 (17.04.2002) IT

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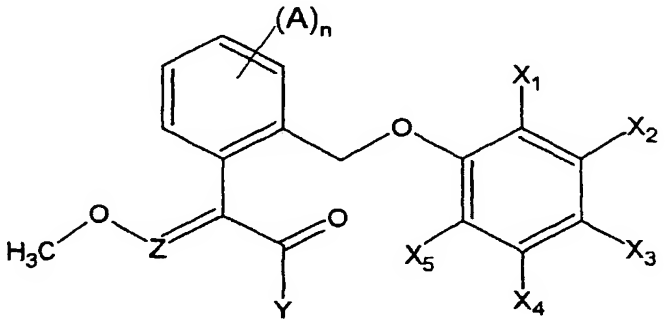
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ANALOGOUS COMPOUNDS OF STROBILURINES AND THEIR USE AS ACARICIDES AND INSECTICIDES



(I)

(57) Abstract: Compounds are described, having general formula (I) and their use as acaricides, insecticides and/or fungicides.

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ANALOGOUS COMPOUNDS OF STROBILURINES AND THEIR USE AS ACARICIDES AND INSECTICIDES

The present invention relates to new analogous compounds of strobilurines. More specifically, the present invention relates to new analogous compounds of strobilurines having a high acaricidal and insecticidal activity and their use as acaricides and insecticides.

Analogous products of strobilurines with a fungicidal activity are described in patent applications EP 178826, EP 226917, EP 253213, EP 278595, EP 398692.

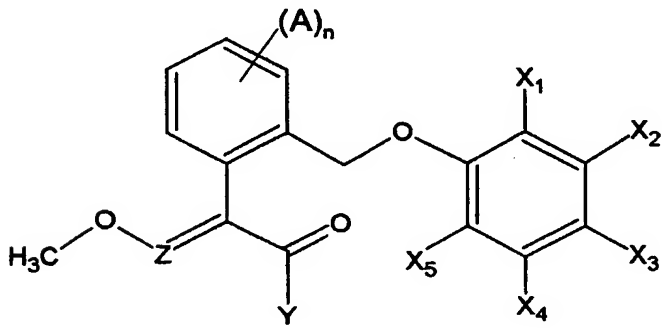
Analogous products of strobilurines with an acaricidal and insecticidal activity are described in patent applications EP 242081, EP 299694, EP 335519. In particular, this latter document describes benzyl-phenyl ethers with an acaricidal and insecticidal activity characterized by the presence of the methoxyacrylate group in position 2 of the benzyl group and not more than two substituents on the phenol ring.

The acaricidal/insecticidal activity of the com-

pounds described in the above documents, however, are moderate and cannot be used for practical purposes.

The applicant has now found that in the series of benzyl-phenyl ethers, whose molecular structure is represented by general formula (I), a surprisingly improved acaricidal and insecticidal activity is obtained when a substituent R is present on the phenol ring, as specified below, and at least two of the other four positions are occupied by halogen atoms.

An object of the present invention therefore relates to compounds having general formula (I)



(I)

wherein:

- a group selected from X_1, X_2 and X_3 represents an R group;
- X_4 and X_5 and two of the remaining X_1, X_2, X_3 groups represent a hydrogen atom or a halogen atom, on the condition that at least two of said groups represent a halogen atom;

- R represents a C_1-C_{12} alkyl or haloalkyl group; a C_1-C_{12} alkoxy or alkylthio group optionally substituted by: halogen atoms, cyano groups, C_1-C_6 alkoxy groups optionally halogenated, C_2-C_{10} alkoxyalkoxy groups optionally halogenated, NH_2 groups optionally substituted by C_1-C_6 alkyl groups optionally halogenated, C_3-C_{12} trialkyl silyl groups, aryloxy or heteroaryloxy groups, in turn optionally substituted by halogen atoms, C_1-C_6 alkyl groups optionally halogenated, C_1-C_6 alkoxy groups optionally halogenated, nitro groups, cyano groups; a C_2-C_{12} alkenyloxy or alkenylthio group optionally substituted by halogen atoms, cyano groups, aryl groups or heteroaryl groups, in turn optionally substituted by halogen atoms, C_1-C_6 alkyl, halo-alkyl, alkoxy, halo-alkoxy groups, nitro groups, cyano groups; a C_3-C_{12} alkynyloxy or alkynylthio group optionally substituted by halogen atoms, C_1-C_6 alkoxy or haloalkoxy groups, aryl or heteroaryl groups, in turn optionally substituted by halogen atoms, C_1-C_6 alkyl, haloalkyl, alkoxy, halo-alkoxy groups, nitro groups, cyano groups; a linear or branched C_3-C_{12} alkoxyiminoalkylidenoxy or alkoxyiminoalkylidenthio group; a C_3-C_8 cycloalkoxy or cycloalkylthio group optionally substituted by halogen atoms, C_1-C_6 alkyl, haloalkyl, alkoxy, haloalkoxy groups; a C_4-C_{12} cycloalkylalkoxy or cycloalkylalkylthio group optionally substituted by halogen

atoms, C_1-C_6 alkyl, haloalkyl, alkoxy, haloalkoxy groups; a heterocyclyloxy, heterocyclylthio, heterocyclyl-(C_1-C_6)alkoxy or hetero-cyclyl-(C_1-C_6)alkylthio group, optionally substituted by halogen atoms, (C_1-C_6) alkyl, haloalkyl, alkoxy, halo-alkoxy groups; an aryloxy, arylthio, heteroaryloxy, heteroarylthio, aryl-(C_1-C_6)alkoxy, aryl-(C_1-C_6)alkylthio, heteroaryl-(C_1-C_6)alkoxy or heteroaryl-(C_1-C_6)alkylthio group optionally substituted by halogen atoms, C_1-C_6 alkyl groups optionally halogenated, C_1-C_6 alkoxy groups optionally halogenated, nitro groups, cyano groups;

- A, the same or different when n is greater than or equal to 2, represents a halogen atom or a C_1-C_4 alkyl, haloalkyl, alkoxy, haloalkoxy group;
- Y represents an OCH_3 group, an $NHCH_3$ group, an NH_2 group;
- Z represents a CH group or a nitrogen atom N;
- n is an integer ranging from 0 to 4.

Preferred compounds having general formula (I) are those wherein X_3 represents an R group according to the meanings defined above, X_2 and X_4 represent a halogen atom, X_1 and X_5 represent a hydrogen atom and n is equal to 0.

In the meanings defined above, halogen atom refers to a fluorine, chlorine, bromine or iodine atom.

Alkyl group refers to a linear or branched group, such as, for example: a methyl, ethyl, iso-propyl, n-propyl, tert-butyl, iso-butyl, n-butyl, n-pentyl, 2,2-dimethylpropyl, n-decyl group.

Haloalkyl group refers to a linear or branched group such as, for example: a trifluoromethyl, trichloromethyl, 2,2,2-trifluoroethyl, 3,3,3-trifluoropropyl, 2,2,2-trifluoro-1-methylethyl group.

Alkoxy or alkylthio group optionally substituted refers to a linear or branched group such as, for example: a methoxy or methylthio group, a difluoromethoxy or difluormethylthio group, a trifluoromethoxy or trifluoromethylthio group, an ethoxy or ethylthio group, a 2,2,2-trifluoroethoxy or 2,2,2-trifluoroethylthio group, a 2-fluoroethoxy or 2-fluoroethylthio group, a 1,1,2,2-tetrafluoroethoxy or 1,1,2,2-tetrafluoroethylthio group, a 1,2-dichloro-1,2-difluoroethoxy or 1,2-dichloro-1,2-difluoroethylthio group, an n-propoxy or n-propylthio group, an iso-propoxy or iso-propylthio group, a 3-chloropropoxy or 3-chloropropylthio group, a 3,3,3-trifluoropropoxy or 3,3,3-trifluoropropylthio group, a 1,1,2,3,3,3-hexafluoropropoxy or 1,1,2,3,3,3-hexafluoropropylthio group, an n-butoxy or n-butylthio group, an iso-butoxy or iso-butylthio group, a tert-butoxy or tert-butylthio group, an n-pentoxy or n-

pentylthio group, a 3-methylbutoxy or 3-methylbutylthio group, a 3,3-dimethylbutoxy or 3,3-dimethylbutylthio, an n-hexyloxy or n-hexylthio group, an n-decyloxy or n-decylthio group, a methoxymethoxy or methoxymethylthio group, an ethoxymethoxy or ethoxymethylthio group, a 2-methoxyethoxy or 2-methoxyethylthio group, a 2-ethoxyethoxy or 2-ethoxyethylthio group, a 2-ethoxypropoxy or 2-ethoxypropylthio group, a 3-methoxyprop-2-yloxy or 3-methoxyprop-2-ylthio group, a 3-ethoxypropoxy or 3-ethoxypropylthio group, a 2-(2-chloroethoxy)ethoxy or 2-(2-chloroethoxy)ethyltio group, a 2-(2-fluoroethoxy)ethoxy or 2-(2-fluoroethoxy)ethyltio group, a 1,1,2-trifluoro-2-trifluoromethoxyethoxy or 1,1,2-trifluoro-2-trifluoromethoxyethylthio group, a 2-(1,1,2,2-tetrafluoroethoxy)ethoxy or 2-(1,1,2,2-tetrafluoroethoxy)ethylthio group, a 2-(2-methoxy-ethoxy)ethoxy or 2-(2-methoxyethoxy)ethylthio group, a 2-(2-ethoxyethoxy)ethoxy or 2-(2-ethoxyethoxy)ethylthio group, a cyanomethoxy or cyanomethylthio group, a 2-cyanoethoxy or 2-cyanoethylthio group, a 2-aminoethoxy or 2-aminoethylthio group, a 3-aminopropoxy or 3-aminopropylthio group, a 2-(N,N-dimethylamino)ethoxy or 2-(N,N-dimethylamino)ethylthio group, a 2-(N,N-diethyl-amino)ethoxy or 2-(N,N-diethylamino)ethylthio group, a 3-(N,N-dimethylamino)propoxy or 3-(N,N-dimethylamino)-

propylthio group, a 2-(N,N-diethylamino)propoxy or 2-(N,N-diethylamino)propylthio group, a 2-(N-ethylamino)-ethoxy or 2-(N-ethylamino)ethylthio group, a trimethylsilylmethoxy or trimethylsilylmethylthio group, a 2-(4-chlorophenoxy)ethoxy or 2-(4-chlorophenoxy)-ethylthio group, a 2-(4-methoxyphenoxy)ethoxy or 2-(4-methoxyphenoxy)ethylthio group, a 2-(4-trifluoromethylphenoxy)ethoxy or 2-(4-trifluoromethylphenoxy)-ethylthio group, a 2-(5-trifluoromethyl-2-pyridyloxy)-ethoxy or 2-(5-trifluoromethyl-2-pyridyloxy)ethylthio group, a 3-(5-trifluoromehtyl-2-pyridyloxy)propoxy or 3-(5-trifluoromethyl-2-pyridyloxy)propylthio group.

An alkenyloxy or alkenylthio group optionally substituted, refers to a linear or branched group such as, for example: a 2-propenyloxy or 2-propenylthio group, a 3-methyl-2-butenyloxy or 3-methyl-2-butenylthio group, a 3,3-dichloro-2-propenyloxy or 3,3-dichloro-2-propenylthio group, a 3-chloro-4,4,4-trifluoro-2-butenyloxy or 3-chloro-4,4,4-trifluoro-2-butenylthio group, a 3,4,4,4-tetrafluoro-2-butenyloxy or 3,4,4,4-tetrafluoro-2-butenylthio group, a 5,5-dichloro-4-pentenyloxy or 5,5-dichloro-4-pentenylthio group, a 3-cyano-2-propenyloxy or 3-cyano-2-propenylthio group, a 3-phenyl-2-propenyloxy or 3-phenyl-2-propenylthio group, a 3-(4-chlorophenyl)-2-propenyloxy or 3-(4-chlorophenyl)-2-propenylthio group.

An alkynyloxy or alkynylthio group optionally substituted, refers to a linear or branched group such as, for example, a 2-propynyloxy or 2-propynylthio group, a 3-butynyloxy or 3-butynylthio group, a 3-butynyl-2-oxy or 3-butynyl-2-thio group, a 3-chloro-2-propynyloxy or 3-chloro-2-propynylthio group, a 4,4,4-trifluoro-2-butynyloxy or 4,4,4-trifluoro-2-butynylthio group, a 5-chloro-4-pentynyloxy or 5-chloro-4-pentynylthio group, a 4-methoxy-2-butynyloxy or 4-methoxy-2-butynylthio group, a 6-methoxy-4-butynyloxy or 6-methoxy-4-butynylthio group, a 3-(4-chlorophenyl)-2-propynyloxy or 3-(4-chlorophenyl)-2-propynylthio group.

An alkoxyiminoalkylidenoxy or alkoxyiminoalkylidenthio group refers to a linear or branched group such as, for example: a 2-methoxyiminoethylidenoxy or 2-methoxyiminoethylidenthio group, a 2-methoxyiminopropylidenoxy or 2-methoxyiminopropylidenthio group.

Examples of cycloalkoxy or cycloalkylthio groups optionally substituted are: a cyclopentoxy or cyclopentylthio group, a cyclohexyloxy or cyclohexylthio group, a 2,2-difluorocyclohexyloxy or 2,2-difluoro-cyclohexylthio group, a 2,6-dimethylcyclohexyloxy or 2,6-dimethylcyclohexylthio group.

Examples of cycloalkylalkoxy or cycloalkylthio groups optionally substituted are: a cyclopropylmethoxy

or cyclopropylmethylthio group, a 1-cyclopropylethoxy or 1-cyclopropylethylthio group, a 2,2-dichlorocyclopropylmethoxy or 2,2-dichlorocyclopropylmethylthio group, a 2,2-dichloro-1-methylcyclopropylmethoxy or 2,2-dichloro-1-methylcyclopropylmethylthio group, a 2-methylcyclopropylmethoxy or 2-methylcyclopropylmethylthio group, a 2,2-dimethylcyclopropylmethoxy or 2,2-dimethylcyclopropylmethylthio group, a cyclobutylmethoxy or cyclobutylmethylthio group, a cyclohexylmethoxy or cyclohexylmethylthio group.

A heterocyclyl group refers to a mono or polycyclic group with 3-14 members, saturated or unsaturated, optionally benzocondensed but not completely aromatic, consisting of carbon atoms and one or more heteroatoms, the same or different, to be selected from nitrogen, sulfur, oxygen.

Examples of heterocyclyloxy or heterocyclylthio groups optionally substituted, are therefore: a tetrahydrofuranyloxy or tetrahydrofuranylthio group, a tetrahydropyranyloxy or tetrahydropyranylthio group, a tetrahydrothiophenoxy or tetrahydrothiophenylthio group, a 1,3-dioxolanyloxy or 1,3-dioxolanylthio group, a 1,4-dioxanyloxy or 1,4-dioxanylthio group, a 3-piperidinyloxy or 3-piperidinylthio group, a 4-piperidinyloxy or 4-piperidinylthio group, a 1-methyl-3-piperidinyloxy or 1-

methyl-3-piperidinylthio group.

Examples of heterocyclyl-(C_1-C_6)alkoxy or heterocyclyl-(C_1-C_6)alkylthio groups optionally substituted, are: a glycidyloxy or glycidylthio group, an oxethanylmethoxy or oxethanylmethylthio group, a tetrahydrofuranylmethoxy or tetrahydrofuranylmethylthio group, a tetrahydropyranylmethoxy or tetrahydropyranyl-methylthio group, a tetrahydrothiophenylmethoxy or tetrahydrothiophenylmethylthio group, a 1,3-dioxolanyl-methoxy or 1,3-dioxolanylmethylthio group, a 1,4-dioxanylmethoxy or 1,4-dioxanylmethylthio group, a 1-piperidinylethoxy or 1-piperidinylethylthio group.

An aryl group refers to a mono- or poly-cyclic aromatic carbocyclic group, such as phenyl and naphthyl.

Examples of aryloxy or arylthio groups optionally substituted, are therefore: a phenoxy or phenylthio group, a 4-trifluoromethylphenoxy or 4-trifluoromethylphenylthio group, a 4-chlorophenoxy or 4-chlorophenylthio group, a 4-nitrophenoxy or 4-nitrophenylthio group, a naphthyloxy or naphthylthio group.

A hetero-aryl group refers to a mono or polycyclic aromatic group consisting of carbon atoms and one or more hetero-atoms, the same or different, to be selected from nitrogen, sulfur, oxygen; for example: pyridyl, thio-

phenyl, furanyl, pyrrolyl, pyrazolyl, pyrimidyl, triazolyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, thiadiazolyl, triazinyl, tetrazinyl, benzoxazolyl.

Examples of hetero-aryloxy or hetero-arylthio groups optionally substituted are therefore: 2-pyridyloxy or 2-pyridylthio, 5-chloro-2-pyridyloxy or 5-chloro-2-pyridylthio, 5-trifluoromethyl-2-pyridyloxy or 5-trifluoromethyl-2-pyridylthio, 5-trifluoromethyl-1,3,4-thiadiazolyloxy or 5-trifluoromethyl-1,3,4-thiadiazolylthio.

Examples of aryl-(C_1-C_6)alkoxy or aryl-(C_1-C_6)alkylthio groups optionally substituted, are: a benzyloxy or benzylthio group, a 4-chlorobenzyloxy or 4-chlorobenzylthio group, a 4-tert-butylbenzyloxy or 4-tert-butylbenzylthio group, a 1-(4-chlorophenyl)ethoxy or 1-(4-chlorophenyl)ethylthio group.

Examples of hetero-aryl-(C_1-C_6)alkoxy or hetero-aryl-(C_1-C_6)alkylthio groups optionally substituted, are: 2-furanylmethoxy or 2-furanylmethylthio, 5-nitro-2-furanylmethoxy or 5-nitro-2-furanylmethylthio, 2-thienylmethoxy or 2-thienylmethylthio, 3-pyridylmethoxy or 3-pyridylmethylthio, 6-chloro-3-pyridylmethoxy or 6-chloro-3-pyridylmethylthio.

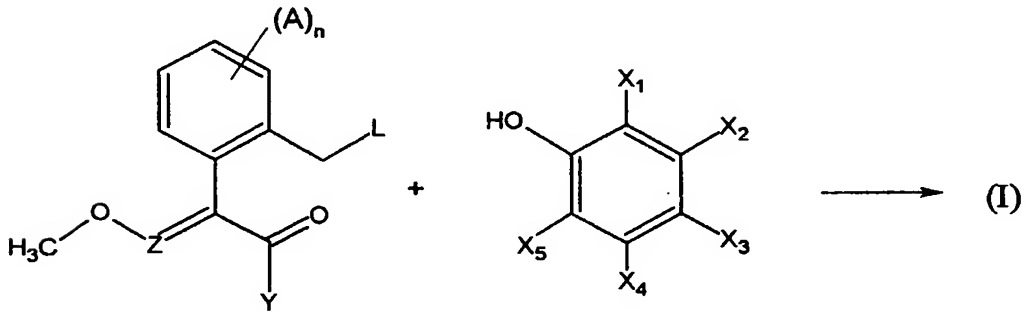
Although the compounds having general formula (I) partially fall within the scope of the general formulae

of patent applications EP 178826, EP 226917, EP 252213, EP 278595 and EP 398692, they are not specifically illustrated therein and are consequently new.

Compounds having formula (I) which are interesting for their biological activity are those described in Examples 1-4 provided further on.

A further object of the present invention relates to the process for the preparation of the compounds having general formula (I).

The compounds having general formula (I) can be obtained by the condensation of a compound having general formula (II) with a phenol having general formula (III), according to reaction scheme 1:



(II) (III)

in said formulae, X_1, X_2, X_3, X_4, X_5, A, Y, Z and n have the meanings defined above, L represents a leaving group such as a chlorine atom, a bromine atom or a $R_LSO_3^-$ group wherein R_L represents a C_1-C_6 alkyl or haloalkyl, or a

phenyl optionally substituted.

The reaction can be conveniently carried out in an inert organic solvent, at a temperature ranging from 0°C to the boiling point of the reaction mixture, optionally in the presence of an inorganic or organic base.

Preferred solvents for the reaction are alcohols (methanol, ethanol, propanol, methoxyethanol, etc.), ethers (ethyl ether, isopropyl ether, tetrahydrofuran, dioxane, dimethoxyethane, etc.), esters (ethyl acetate, etc.), ketones (acetone, methylethylketone, etc.), chlorinated hydrocarbons (methylene chloride, dichloroethane, chloroform, carbon tetrachloride, etc.), aromatic hydrocarbons (benzene, toluene, xylene, etc.), aliphatic hydrocarbons (hexane, heptane, cyclohexane, etc.), aprotic dipolar solvents (N,N-dimethylformamide, dimethylsulfoxide, sulfolane, etc.).

Preferred inorganic bases are: hydrides, hydroxides, carbonates of alkaline or alkaline-earth metals (sodium, potassium, calcium, etc.).

Preferred organic bases are: pyridine, dimethylaminopyridine, aliphatic amines (diethylamine, triethylamine, etc.), cyclic amines (morpholine, piperidine, diazabicycloundecene, etc.), alcoholates of alkaline metals (sodium methylate, potassium t-butylate, etc.).

The intermediates having general formula (II) are

known compounds.

The phenols of general formula (III), when not known in themselves, can be prepared according to methods known in organic chemical practice.

The compounds having general formula (I) wherein Y represents NH_2 or $NHCH_3$ can be alternatively prepared by reaction of the corresponding methyl esther [Y = OCH_3 in general formula (I)] with ammonia (NH_3), or with methylamine (CH_3NH_2).

The reaction can be conveniently carried out in an inert organic solvent, at a temperature ranging from 0°C to the boiling point of the reaction mixture.

Preferred solvents for carrying out the reaction are alcohols (methanol, ethanol, propanol, methoxyethanol, etc.), ethers (ethyl ether, isopropyl ether, tetrahydrofuran, dioxane, dimethoxyethane, etc.), ketones (acetone, methylethylketone, etc.), chlorinated hydrocarbons (methylene chloride, dichloroethane, chloroform, carbon tetrachloride, etc.), aromatic hydrocarbons (benzene, toluene, xylene, etc.), aliphatic hydrocarbons (hexane, heptane, cyclohexane, etc.), aprotic dipolar solvents (N,N-dimethylformamide, dimethylsulfoxide, sulfolane, etc.) or mixtures of these in any ratio.

The compounds having general formula (I) have an geometric isomerism on the C=Z double bond; the use of

the compounds having formula (I) as isomeric mixtures in any proportion, as also the production and use of the single E or Z isomers are included in the scope of the present invention. For the purposes of a biological activity E isomers of the compounds of formula (I) are preferred.

The compounds having general formula (I) have a high acaricidal and insecticidal activity which is exerted with respect to the adults, larvae and eggs of mites and insects which are harmful in the agrarian, civil and zootechnical field.

A further object of the present invention therefore relates to the use of the compounds having general formula (I) as acaricides and/or insecticides and/or fungicides, both in agriculture and other fields. In particular, the use of E isomers of the compounds having formula (I) are preferred.

The use of the compounds having formula (I) wherein X_3 represents an R group according to the meanings defined above, X_2 and X_4 represent a halogen atom, X_1 and X_5 represent a hydrogen atom and n is equal to 0, is preferred.

Particularly preferred is the use of compounds having formula (I) selected from:

- methyl (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophen-

oxymethyl)phenyl]-3-methoxyacrylate;

- methyl (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-2-methoxyiminoacetate;

- (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-N-methyl-2-methoxyiminoacetamide;

- methyl (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-2-methoxyiminoacetate;

- (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate;

- (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)-phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate;

- (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-tri-fluorobut-

2-enyloxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyimino-acetamide;

- methyl (*E*)-2-[2-(4-cyclobutylmethoxy-3,5-dichloro-phenoxymethyl)phenyl]-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dimethylbutoxy) phenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-methylbutoxy) phenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-[2-(4-cyclohexylmethoxy-3,5-dichloro-phenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(2,4-dichloro-benzyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(4-chloro-benzyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate.

In particular, the compounds having general formula (I) are active against important species of tetranychidae (*Tetranychus urticae, Tetranychus telarius, Tetranychus cinnabarinus, Eotetranychus carpini, Panonychus ulmi, Panonychus citri,* etc.), eriophyidae (*Phytoptus avellanae, Eriophyes vitis, Eriophyes piri,* etc.) tarsonemidae (*Steneotarsonemus pallidus,* etc.), hemiptera (*Macrosiphum euphorbiae, Aphis fabae, Myzus persicae,* etc.), lepidoptera (Spodoptera spp., Heliothis spp., Chilo spp., *Carpocapsa pomonella,* etc.), coleoptera (*Leptinotarsa decemlineata, Phaedon cochleariae,* etc.), diptera (Aedes

spp., Culex spp., Musca spp., etc.).

The compounds having general formula (I) also have a good fungicidal activity of both a preventive and curative nature: examples of phytopathogen fungi which can be controlled with the compounds of the invention are: Helminthosporium spp., Erysiphe spp., Puccinia spp., *Plasmopara viticola,* Pythium spp., Phytophthora spp., Rhynchosporium spp., Septoria spp., *Sphaerotheca fuliginea, Podosphaera leucotricha, Pyricularia oryzae, Uncinula necator,* Venturia spp., *Botrytis cinerea,* Fusarium spp., Alternaria spp., Cercospora spp.

At the same time, the compounds having general formula (I) have a low toxicity with respect to many useful insects and mites, with respect to mammals, fish, birds, and have no phytotoxicity.

Thanks to their positive characteristics, they can be advantageously used in defending not only crops of agrarian and horticultural interest, but also domestic and breeding animals, as well as environments frequented by human beings, from harmful mites, insects and fungi.

The quantity of compound to be applied to obtain the desired effect can vary in relation to various factors such as, for example, the compound used, the crop to be preserved, the type of harmful organism, the degree of infestation, the climatic conditions, the method of ap-

plication, the formulation adopted.

Doses of compound ranging from 10 g to 5 kg per hectare generally provide a sufficient control.

A further object of the present invention also relates to a method for controlling mites and/or insects and/or phytopathogenic fungi in crops of agrarian and horticultural interest and/or on domestic and breeding animals and/or in environments frequented by human beings, by the application of the compounds having general formula (I). In particular, the quantity of compound to be applied varies from 10 g to 5 kg per hectare.

For practical use in agriculture, it is often useful to use compositions containing one or more compounds having general formula (I).

A further object of the present invention therefore relates to acaricidal and/or insecticidal and/or fungicidal compositions containing one or more compounds having general formula (I) as active principle.

Compositions can be used in the form of dry powders, wettable powders, emulsifiable concentrates, microemulsions, pastes, granulates, solutions, suspensions, etc.: the selection of the type of composition depends on the specific use.

The compositions are prepared in the known way, for example by diluting or dissolving the active substance

with a solvent medium and/or a solid diluent, optionally in the presence of surface-active agents.

Solid diluents, or carriers which can be used are, for example: silica, kaolin, bentonite, talc, diatomite, dolomite, calcium carbonate, magnesia, chalk, clays, synthetic silicates, attapulgite, seppiolite.

Liquid diluents which can be used are, for example, in addition to water, aromatic organic solvents (xylols or mixtures of alkylbenzols, chlorobenzene, etc.), paraffins (petroleum fractions), alcohols (methanol, propanol, butanol, octanol, glycerin, etc.), esters (ethyl acetate, isobutyl acetate, etc.), ketones (cyclohexanone, acetone, acetophenone, isophorone, ethylamylketone, etc.), amides (N,N-dimethylformamide, N-methylpyrrolidone, etc.).

Surface-active agents which can be used are salts of sodium, calcium, triethylamine or triethanolamine of alkylsulfonates, alkylarylsulfonates, polyethoxylated alkylphenols, polyethoxylated esters of sorbitol, lignin-sulfonates, etc.

The compositions can also contain special additives for particular purposes, for example adhesion agents such as Arabic gum, polyvinyl alcohol, polyvinyl-pyrrolidone, etc.

The concentration of active principle in the above compositions can vary within a wide range depending on

the active compound, the applications for which they are destined, the environmental conditions and the type of formulation adopted. In general the concentration of active principle ranges from 1 to 90%, preferably from 5 to 50%.

If required, it is possible to add to the compositions, other active principles compatible with the compounds having general formula (I), such as, for example, other acaricides/insecticides, fungicides, phytoregulators, antibiotics, herbicides, fertilizers.

Examples of other acaricides/insecticides which can be added to the above compositions are: abamectin, acephate, acetamiprid, acetoprole, acrinathrin, acequinocyl, alanycarb, aldicarb, allethrin, alpha-cypermethrin, amitraz, azadirachtin, azamethiphos, azinphos-ethyl, azinphos-methyl, azocyclotin, bendiocarb, benfuracarb, bensultap, benzoximate, bifenazate, bifenthrin, bioallethrin, bioresmethrin, bistrifluron, (DBI-3204), bromopropylate, buprofezin, butocarboxim, butoxycarboxim, cadusafos, carbofuran, carbosulfan, cartap, CGA 50439, chinomethionat, chlordane, chlorethoxyfos, chlorfenapyr, chlorfenvinphos, chlorfluazuron, chlormephos, chloropicrin, chlorpyrifos, chlorpyrifos-methyl, chromafenozide, clofentezine, clothianidin, coumaphos, cyanophos, cyclopropthrin, cyfluthrin, cyhalothrin, cyhexatin, cypermethrin,

cyphenothrin, cyromazine, DDT, deltamethrin, demeton-S-methyl, diafenthiuron, diazinon, dichlorvos, dicofol, dicrotophos, dicyclanil, dienochlor, diflubenzuron, dimethoate, dimethylvinphos, dinobuton, dinocap, dinotefuran (MTI-446), diofenolan, disulfoton, DNOC, indoxacarb, endosulfan, EPN, esfenvalerate, ethiofencarb, ethion, ethiprole, ethoprophos, etofenprox, etoxazole, etrimfos, famphur, fenazaquin, fenbutatin oxide, fenitrothion, fenobucarb, fenothiocarb, fenoxycarb, fenpropathrin, fenpyroximate, fenthion, fenvalerate, fipronil, flucycloxuron, flucythrinate, flufenoxuron, flufenprox, flufenzin, flumethrin, fluvalinate, fonofos, formetanate, formothion, furathiocarb, halfenprox, halofenozide, heptachlor, heptenophos, hexaflumuron, hexythiazox, hydroprene, IKA-2000, IKI-220, imidacloprid, isazofos, isofenphos, isoprocarb, isoxathion, lindane, lufenuron, malathion, mecarbam, methacrifos, methamidophos, methidathion, methiocarb, methomyl, methoprene, methoxychlor, methoxyfenozide, metolcarb, mevinphos, milbemectin, monocrotophos, naled, nicotine, nitenpyran, nithiazine, novaluron, omethoate, oxamyl, oxydemeton-methyl, parathion, permethrin, petroleum oils, phenothrin, phenthoate, phorate, phosalone, phosmet, phosphamidon, phoxim, pirimicarb, pirimiphos-ethyl, pirimiphos-methyl, profenofos, propaphos, propargite, propetamphos, propoxur, prothiofos,

protrifenbute, pymetrozine, pyraclofos, pyrethrins, pyridaben, pyridaphenthion, pyrimidifen, pyriproxyfen, quinalphos, rotenone, S-1812, silafluofen, spirodiclofen (BAJ2740), sulfluramid, sulfotep, sulprofos, tar oils, tebufenozide, tebufenpyrad, tebupirimfos, teflubenzuron, tefluthrin, temephos, terbufos, tetrachlorvinphos, tetradifon, tetramethrin, thiacloprid, thiamethoxam, thiocyclam, thiodicarb, thiofanox, thiometon, tolfenpyrad, tralomethrin, transfluthrin, triazamate, triazophos, trichlorfon, triflumuron, trimethacarb, vamidothion, spinosad, vaniliprole, XMC, xylylcarb, ZXI 8901.

Some examples are provided for illustrative purposes but in no way limit the scope of the present invention.

EXAMPLE 1

Preparation of methyl (E)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-3-methoxyacrylate (compound Nr. 1).

A solution of 4-cyclopropylmethoxy-3,5-dichlorophenol (1.54 g; 6.6 mmoles) in DMF (5 ml) is added dropwise, at 0°C, to a suspension of sodium hydride (0.16 g; 6.6 mmoles) in N,N-dimethyl formamide (DMF; 5 ml). The mixture is kept under stirring at room temperature for 30 minutes and a solution of methyl (E)-2-(2-

bromomethylphenyl)-3-methoxyacrylate (1.9 g; 6.6 mmoles) in DMF (5 ml) is then added. The mixture is kept under stirring for 4 hours; the mixture is diluted with water (40 ml) and an extraction is effected with ethyl acetate (3x25 ml). The organic phases are joined, washed with water (2x20 ml), dried with sodium sulfate, filtered and concentrated at reduced pressure. The raw product obtained is purified by means of silica gel chromatography, eluting with hexane/ethyl acetate 9:1. 1.9 g of the desired product (thick oil) are obtained.

^{1}H-NMR ($CDCl_3$): δ 0.33 (2H,m), 0.61 (2H,m), 1.30 (1H,m), 3.71 (3H,s), 3.78 (2H,d), 3.85 (3H,s), 4.90 (2H,s), 6.82 (2H,s), 7.10-7.55 (4H,m), 7,61 (1H,s).

EXAMPLE 2

Preparation of methyl (E)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)-phenyl]-2-methoxyiminoacetate (compound Nr.2).

A solution of 4-cyclopropylmethoxy-3,5-dichlorophenol (1.54 g; 6.6 mmoles) in DMF (5 ml) is added dropwise, at 0°C, to a suspension of sodium hydride (0.16 g; 6.6 mmoles) in DMF (5 ml). The mixture is kept under stirring at room temperature for 30 minutes, and a solution of methyl (E)-2-(2-bromomethylphenyl)-3-methoxyiminoacetate (1.9 g; 6.6 mmoles) in DMF (5 ml) is then added. The mixture is kept under stirring for 4

hours; the mixture is diluted with water (40 ml) and an extraction is effected with ethyl acetate (3x25 ml). The organic phases are joined, washed with water (2x20 ml), dried with sodium sulfate, filtered and concentrated at reduced pressure. The raw product obtained is purified by means of silica gel chromatography, eluting with hexane/ethyl acetate 9:1. 1.7 g of the desired product (thick oil) are obtained.

^{1}H-NMR ($CDCl_3$): δ 0.33 (2H,m), 0.61 (2H,m), 1.30 (1H,m), 3.78 (2H,d), 3.85 (3H,s), 4.03 (3H,s), 4.90 (2H,s), 6.82 (2H,s), 7.10-7.55 (4H,m).

EXAMPLE 3

Preparation of (E)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)-phenyl]-N-methyl-2-methoxyimino-acetamide (compound Nr.3).

A 40% aqueous solution of methylamine (0.8 ml) is added to a solution of methyl (E)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)-phenyl]-2-methoxyiminoacetate (compound nr.2; 0.88g; 2 mmoles) in DMF (2 ml) and methanol (4 ml). The mixture is kept under stirring for 2 hours at room temperature, diluted with water (40 ml) and an extraction is effected with ethyl acetate (3x25 ml). The organic phases are joined, washed with water (2x20 ml), dried with sodium sulfate and concentrated at reduced pressure. 0.8 g of the product

(thick oil) are obtained, which do not require further purification.

^{1}H-NMR ($CDCl_3$): δ 0.33 (2H,m), 0.61 (2H,m), 1.30 (1H,m), 2.90 (3H,d), 3.78 (2H,d), 4.03 (3H,s), 4.90 (2H,s), 6.78 (1H,mb), 6.82 (2H,s), 7.10-7.55 (4H,m).

EXAMPLE 4

Preparation of compounds Nr. 4-146.

Operating as described in examples 1-3, the following products were prepared and identified by means of ^{1}H-NMR spectroscopy and GC-MS:

- methyl (E)-2-[2-(4-cyclopentoxy-3,5-dichlorophenoxymethyl)phenyl]-3-methoxyacrylate (compound Nr.4);
- methyl (E)-2-[2-(4-cyclopentoxy-3,5-dichlorophenoxymethyl)phenyl]-2-methoxyiminoacetate (compound Nr.5);
- (E)-2-[2-(4-cyclopentoxy-3,5-dichlorophenoxymethyl) phenyl]-N-methyl-2-methoxyiminoacetamide (compound Nr.6);
- methyl (E)-2-[2-(4-cyclobutylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-3-methoxyacrilate (compound Nr.7);
- methyl (E)-2-[2-(4-cyclobutylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-2-methoxyiminoacetate (compound Nr.8);
- (E)-2-[2-(4-cyclobutylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-N-methyl-2-methoxyiminoacetamide (compound Nr.9);
- methyl (E)-2-[2-(4-cyclohexyloxy-3,5-dichlorophe-

noxymethyl)phenyl]-3-methoxyacrylate (compound Nr.10);

- methyl (E)-2-[2-(4-cyclohexyloxy-3,5-dichlorophenoxymethyl)phenyl]-2-methoxyiminoacetate(compound Nr.11);

- (E)-2-[2-(4-cyclohexyloxy-3,5-dichlorophenoxymethyl) phenyl]-N-methyl-2-methoxyiminoacetamide (compound Nr.12);

- methyl (E)-2-[2-(4-cyclohexylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-3-methoxyacrylate, solid with m.p. 103°C;

^{1}H-NMR($CDCl_3$): δ 1.22 (5H,m), 1.88 (6H,m), 3.73 (3H,s), 3.74 (2H,d), 3.82 (3H,s), 4.93 (2H,s), 6.84 (2H,s), 7.10-7.55 (4H,m), 7.62 (1H,s). (compound Nr.13);

- methyl (E)-2-[2-(4-cyclohexylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-2-methoxyiminoacetate(compound Nr.14);

- (E)-2-[2-(4-cyclohexylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-N-methyl-2-methoxyiminoacetamide (compound Nr.15);

- methyl (E)-2-[2-(3,5-dichloro-4-methoxyphenoxymethyl)phenyl]-3-methoxyacrylate (compound Nr.16);

- methyl (E)-2-[2-(3,5-dichloro-4-metoxyphenoxymethyl)phenyl]-2-methoxyiminoacetate(compound Nr.17);

-(E)-2-[2-(3,5-dichloro-4-methoxyphenoxymethyl) phenyl]-N-methyl-2-methoxyiminoacetamide (compound Nr.18);

- methyl (E)-2-[2-(3,5-dichloro-4-ethoxyphenoxymethyl) phenyl]-3-methoxyacrylate (compound Nr.19);

- methyl (E)-2-[2-(3,5-dichloro-4-ethoxyphenoxymethyl) phenyl]-2-methoxyiminoacetate(compound Nr.20);
- (E)-2-[2-(3,5-dichloro-4-ethoxyphenoxymethyl)phenyl] -N-methyl-2-methoxyiminoacetamide (compound Nr.21);
- methyl (E)-2-[2-(3,5-dichloro-4-isopropoxyphenoxy-methyl)phenyl]-3-methoxyacrylate (compound Nr.22);
- methyl (E)-2-[2-(3,5-dichloro-4-isopropoxyphenoxyme-thyl)phenyl]-2-methoxyiminoacetate (compound Nr.23);
- (E)-2-[2-(3,5-dichloro-4-isopropoxyphenoxymethyl)-phenyl]-N-methyl-2-methoxyiminoacetamide(compound Nr.24);
- methyl (E)-2-[2-(3,5-dichloro-4-isobutoxyphenoxy-methyl)phenyl]-3-methoxyacrylate (compound Nr.25);
- methyl (E)-2-[2-(3,5-dichloro-4-isobutoxyphenoxyme-thyl)phenyl]-2-methoxyiminoacetate (compound Nr.26);
- (E)-2-[2-(3,5-dichloro-4-isobutoxyphenoxymethyl)-phenyl]-N-methyl-2-methoxyiminoacetamide(compound Nr.27);
- methyl (E)-2-{2-[3,5-dichloro-4-(2,2-dimethylpropo-xy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.28);
- methyl (E)-2-{2-[3,5-dichloro-4-(2,2-dimethylpropo-xy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.29);
- (E)-2-{2-[3,5-dichloro-4-(2,2-dimethylpropoxy) phe-noxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (com-pound Nr.30);

- methyl (E)-2-{2-[3,5-dichloro-4-(2,2-dimethylethoxy) phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.31);
- methyl (E)-2-{2-[3,5-dichloro-4-(2,2-dimethylethoxy) phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.32);
- (E)-2-{2-[3,5-dichloro-4-(2,2-dimethylethoxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.33);
- methyl (E)-2-{2-[3,5-dichloro-4-(3-methylbutoxy)-phenoxymethyl]phenyl}-3-methoxyacrylate, m.p. 70°C; ^{1}H-NMR($CDCl_3$): δ 1.0 (6H,d), 1.73 (2H,m), 1.94 (1H,m), 3.73 (3H,s), 3.82 (3H,s), 3.98 (2H,m), 4.93 (2H,s), 6.84 (2H,s), 7.10-7.55 (4H,m), 7.62 (1H,s). (compound Nr.34);
- methyl (E)-2-{2-[3,5-dichloro-4-(3-methylbutoxy)-phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.35);
- (E)-2-{2-[3,5-dichloro-4-(3-methylbutoxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.36);
- methyl (E)-2-[2-(3,5-dichloro-4-hexyloxyphenoxymethyl)phenyl]-3-methoxyacrylate (compound Nr.37);
- methyl (E)-2-[2-(3,5-dichloro-4-hexyloxyphenoxymethyl)phenyl]-2-methoxyiminoacetate (compound Nr.38);
- (E)-2-[2-(3,5-dichloro-4-hexyloxyphenoxymethyl) phenyl]-N-methyl-2-methoxyiminoacetamide(compound Nr.39);

- methyl (E)-2-[2-(3,5-dichloro-4-decyloxyphenoxymethyl)phenyl]-3-methoxyacrylate (compound Nr.40);
- methyl (E)-2-[2-(3,5-dichloro-4-decyloxyphenoxymethyl)phenyl]-2-methoxyiminoacetate (compound Nr.41);
- (E)-2-[2-(3,5-dichloro-4-decyloxyphenoxymethyl)-phenyl]-N-methyl-2-methoxyiminoacetamide(compound Nr.42);
- methyl (E)-2-[2-(3,5-dichloro-4-n-propoxyphenoxymethyl)phenyl]-3-methoxyacrylate (compound Nr.43);
- methyl (E)-2-[2-(3,5-dichloro-4-n-propoxyphenoxymethyl)phenyl]-2-methoxyiminoacetate (compound Nr.44);
- (E)-2-[2-(3,5-dichloro-4-n-propoxyphenoxymethyl)-phenyl]-N-methyl-2-methoxyiminoacetamide(compound Nr.45);
- methyl (E)-2-{2-[3,5-dichloro-4-(2-ethoxyethoxy)-phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.46);
- methyl (E)-2-{2-[3,5-dichloro-4-(2-ethoxyethoxy)-phenoxymethyl]phenyl}-2-methoxyaminoacetate (compound Nr.47);
- (E)-2-{2-[3,5-dichloro-4-(2-ethoxyethoxy)phenoxymethyl]phenyl}-2-methoxyaminoacetamide (compound Nr.48);
- methyl (E)-2-{2-[3,5-dichloro-4-(2-methoxyethoxy)-phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.49);
- methyl (E)-2-{2-[3,5-dichloro-4-(2-methoxyethoxy)-phenoxymethyl]phenyl}-2-methoxyaminoacetate (compound Nr.50);
- (E)-2-{2-[3,5-dichloro-4-(2-methoxyethoxy)phenoxyme-

thyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.51);

- methyl (E)-2-{2-[3,5-dichloro-4-(2-ethoxymethoxy)-phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.52);
- methyl (E)-2-{2-[3,5-dichloro-4-(2-ethoxymethoxy)-phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.53);
- (E)-2-{2-[3,5-dichloro-4-(2-ethoxymethoxy)-phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.54);
- methyl (E)-2-{2-[3,5-dichloro-4-(2,2,2-trifluoroethoxy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.55);
- methyl (E)-2-{2-[3,5-dichloro-4-(2,2,2-trifluoroethoxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.56);
- (E)-2-{2-[3,5-dichloro-4-(2,2,2-trifluoroethoxy)-phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.57);
- methyl (E)-2-[2-(3,5-dichloro-4-trifluoromethoxyphenoxymethyl)phenyl]-3-methoxyacrylate (compound Nr.58);
- methyl (E)-2-[2-(3,5-dichloro-4-trifluoromethoxyphenoxymethyl)phenyl]-2-methoxyiminoacetate (compound Nr.59);
- (E)-2-[2-(3,5-dichloro-4-trifluoromethoxyphenoxy-

methyl)phenyl]-N-methyl-2-methoxyiminoacetamide (compound Nr.60);

- methyl(E)-2-{2-[3,5-dichloro-4-(1,1,2,2-tetrafluoroethoxy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.61);

- methyl(E)-2-{2-[3,5-dichloro-4-(1,1,2,2-tetrafluoroethoxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.62);

- (E)-2-{2-[3,5-dichloro-4-(1,1,2,2-tetrafluoroethoxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.63);

- methyl(E)-2-{2-[3,5-dichloro-4-(1,1,2,3,3,3-hexafluoropropoxy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.64);

- methyl(E)-2-{2-[3,5-dichloro-4-(1,1,2,3,3,3-hexafluoropropoxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.65);

- (E)-2-{2-[3,5-dichloro-4-(1,1,2,3,3,3-hexafluoropropoxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.66);

- methyl(E)-2-{2-[3,5-dichloro-4-(2-trifluoromethoxy-1,1,2-trifluoroethoxy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.67);

- methyl(E)-2-{2-[3,5-dichloro-4-(2-trifluoromethoxy-1,1,2-trifluoroethoxy)phenoxymethyl]phenyl}-2-methoxy-

iminoacetate (compound Nr.68);

- (E)-2-{2-[3,5-dichloro-4-(2-trifluoromethoxy-1,1,2-trifluoroethoxy)phenoxymethyl]phenyl}-N-methyl-2-methoxy-iminoacetamide (compound Nr.69);

- methyl(E)-2-{2-[3,5-dichloro-4-(2-(2-ethoxyethoxy)-ethoxy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.70);

- methyl(E)-2-{2-[3,5-dichloro-4-(2-(2-ethoxyethoxy)-ethoxy)phenoxymethyl]phenyl}-3-methoxyiminoacetate (compound Nr.71);

- (E)-2-{2-[3,5-dichloro-4-(2-(2-ethoxyethoxy)ethoxy)-phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.72);

- methyl(E)-2-{2-[3,5-dichloro-4-(4-trifluoromethyl-phenoxy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.73);

- methyl(E)-2-{2-[3,5-dichloro-4-(4-trifluoromethyl-phenoxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.74);

- (E)-2-{2-[3,5-dichloro-4-(4-trifluoromethylphenoxy)-phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.75);

- methyl(E)-2-{2-[3,5-dichloro-4-(4-cyanophenoxy)-phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.76);

- methyl(E)-2-{2-[3,5-dichloro-4-(4-cyanophenoxy)-

phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.77);

- (E)-2-{2-[3,5-dichloro-4-(4-cyanophenoxy)phenoxy-methyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.78);

- methyl(E)-2-{2-[3,5-dichloro-4-(4-nitrophenoxy)-phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.79);

- methyl(E)-2-{2-[3,5-dichloro-4-(4-nitrophenoxy)-phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.80);

- (E)-2-{2-[3,5-dichloro-4-(4-nitrophenoxy)phenoxy-methyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.81);

- methyl(E)-2-[2-(3,5-dichloro-4-benzyloxyphenoxy-methyl)phenyl]-3-methoxyacrylate (compound Nr.82);

- methyl(E)-2-[2-(3,5-dichloro-4-benzyloxyphenoxy-methyl)phenyl]-2-methoxyiminoacetate (compound Nr.83);

- (E)-2-[2-(3,5-dichloro-4-benzyloxyphenoxymethyl)-phenyl]-N-methyl-2-methoxyiminoacetamide (compound nr.84);

- methyl(E)-2-{2-[3,5-dichloro-4-(4-methoxybenzyloxy) phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.85);

- methyl(E)-2-{2-[3,5-dichloro-4-(4-methoxybenzyloxy) phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.86);

- (E)-2-{2-[3,5-dichloro-4-(4-methoxybenzyloxy)- phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.87);
- methyl(E)-2-{2-[3,5-dichloro-4-(4-tert-butyl)benzyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.88);
- methyl(E)-2-{2-[3,5-dichloro-4-(4-tert-butyl) benzyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.89);
- (E)-2-{2-[3,5-dichloro-4-(4-tert-butyl)benzyloxy) phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.90);
- methyl(E)-2-{2-[3,5-dichloro-4-(5-trifluoromethyl-pyrid-2-yloxy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.91);
- methyl(E)-2-{2-[3,5-dichloro-4-(5-trifluoromethyl-pyrid-2-yloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.92);
- (E)-2-{2-[3,5-dichloro-4-(5-trifluoromethylpyrid-2-yloxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyimino-acetamide (compound Nr.93);
- methyl(E)-2-{2-[3,5-dichloro-4-(2-propynyloxy)- phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.94);
- methyl(E)-2-{2-[3,5-dichloro-4-(2-propynyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.95);

- (E)-2-{2-[3,5-dichloro-4-(2-propynyloxy)-phenoxy-methyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.96);
- methyl(E)-2-{2-[3,5-dichloro-4-(3-butyn-2-yloxy)-phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.97);
- methyl(E)-2-{2-[3,5-dichloro-4-(3-butyn-2-yloxy)-phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.98);
- (E)-2-{2-[3,5-dichloro-4-(3-butyn-2-yloxy)phenoxy-methyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.99);
- methyl(E)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate, thick oil;

^{1}H-NMR($CDCl_3$): δ 3.74 (3H,s), 3.82 (3H,s), 4.60 (2H,d), 4.93 (2H,s), 6.30 (1H,t), 6.84 (2H,s), 7.10-7.55 (4H,m), 7.62 (1H,s). (compound Nr.100);

- methyl(E)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.101);
- (E)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}N-methyl-2-methoxyimino-acetamide (compound Nr.102);
- methyl(E)-2-{2-[3,5-dichloro-4-(cyanomethoxy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.103);

- methyl(E)-2-{2-[3,5-dichloro-4-(cyanomethoxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.104);
- (E)-2-{2-[3,5-dichloro-4-(cyanomethoxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.105);
- methyl(E)-2-{2-[2,6-dichloro-4-(2,2-dimethylethyl)phenoxymethyl]phenyl}-3-methoxyacrylate(compound Nr.106);
- methyl(E)-2-{2-[2,6-dichloro-4-(2,2-dimethylethyl)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.107);
- (E)-2-{2-[2,6-dichloro-4-(2,2-dimethylethyl)phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.108);
- methyl(E)-2-[2-(3-cyclopropylmethoxy-4,6-dichlorophenoxymethyl)phenyl]-3-methoxyacrylate(compound Nr.109);
- methyl(E)-2-[2-(3-cyclopropylmethoxy-4,6-dichlorophenoxymethyl)phenyl]-2-methoxyiminoacetate (compound Nr.110);
- (E)-2-[2-(3-cyclopropylmethoxy-4,6-dichlorophenoxymethyl)phenyl]-N-methyl-2-methoxyiminoacetamide (compound Nr.111);
- methyl(E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.112);
- methyl(E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-

3,5-dichlorophenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.113);

- (E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-N-methyl-2-methoxyimino-acetamide (compound Nr.114);

- methyl(E)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-3-methoxy-acrylate, thick oil,

^{1}H-NMR($CDCl_3$): δ 3.74 (3H,s), 3.82 (3H,s), 4.72 (2H,m), 4.93 (2H,s), 6.72 (1H,m), 6.84 (2H,s), 7.10-7.55 (4H,m), 7.62 (1H,s). (compound Nr.115);

- methyl(E)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-2-methoxy-iminoacetate (compound Nr.116);

- (E)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluoro-but-2-enyloxy)phenoxymethyl]phenyl}-N-methyl-2-methoxy-iminoacetamide (compound Nr.117);

- methyl(E)-2-{2-[3,5-dichloro-4-(3-bromo-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-3-methoxy-acrylate (compound Nr.118);

- methyl(E)-2-{2-[3,5-dichloro-4-(3-bromo-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-2-methoxy-iminoacetate (compound Nr.119);

- (E)-2-{2-[3,5-dichloro-4-(3-bromo-4,4,4-trifluoro-but-2-enyloxy)phenoxymethyl]phenyl}-N-methyl-2-methoxy-

iminoacetamide (compound Nr.120);

- methyl(E)-2-{2-[3,5-dichloro-4-(3,4,4,4-tetrafluoro-but-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.121);

- methyl(E)-2-{2-[3,5-dichloro-4-(3,4,4,4-tetrafluoro-but-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.122);

- (E)-2-{2-[3,5-dichloro-4-(3,4,4,4-tetrafluoro-but-2-enyloxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyimino-acetamide (compound Nr.123);

- methyl(E)-2-{2-[3,5-dichloro-4-(3,3-dibromoprop-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.124);

- methyl(E)-2-{2-[3,5-dichloro-4-(3,3-dibromoprop-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.125);

- (E)-2-{2-[3,5-dichloro-4-(3,3-dibromoprop-2-enyloxy)phenoxymethyl]phenyl}-N-2-methoxyiminoacetamide (compound Nr.126);

- methyl(E)-2-{2-[3,5-dichloro-4-(3,3-difluoroprop-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.127);

- methyl(E)-2-{2-[3,5-dichloro-4-(3,3-difluoroprop-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.128);

- (E)-2-{2-[3,5-dichloro-4-(3,3-difluoroprop-2-enyloxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyimino-acetamide (compound Nr.129);
- methyl(E)-2-{2-[5-(2,2-dichlorocyclopropyl)methoxy-2,4-dichlorophenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.130);
- methyl(E)-2-{2-[5-(2,2-dichlorocyclopropyl)methoxy-2,4-dichlorophenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.131);
- (E)-2-{2-[5-(2,2-dichlorocyclopropyl)methoxy-2,4-dichlorophenoxymethyl]phenyl}-N-methyl-2-methoxyimino-acetamide (compound Nr.132);
- methyl(E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-2,6-dichlorophenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.133);
- methyl(E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-2,6-dichlorophenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.134);
- (E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-2,6-dichlorophenoxymethyl]phenyl}-N-methyl-2-methoxyimino-acetamide (compound Nr.135);
- methyl(E)-2-{2-[(2,4-dichloro-5-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.136);
- methyl(E)-2-{2-[(2,4-dichloro-5-(3,3-dichloroprop-2-

enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.137);

- (E)-2-{2-[(2,4-dichloro-5-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.138);

- methyl(E)-2-{2-[(2,6-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate (compound Nr.139);

- methyl(E)-2-{2-[(2,6-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate (compound Nr.140);

- (E)-2-{2-[(2,6-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide (compound Nr.141);

- methyl (E)-2-{2-[3,5-dichloro-4-(3,3-dimethylbutoxy) phenoxymethyl]phenyl}-3-methoxyacrylate, m.p. 80°C, ^{1}H-NMR($CDCl_3$): δ 1.0 (9H,s), 1.8 (2H,m), 3.73 (3H,s), 3.82 (3H,s), 3.98 (2H,t), 4.93 (2H,s), 6.84 (2H,s), 7.1-7.55 (4H,m), 7.62 (1H,s); (compound Nr.142);

- methyl (E)-2-{2-[3,5-dichloro-4-(3,3-dimethylbutoxy) phenoxymethyl]phenyl}-2-methoxyiminoacetate, thick oil, (compound Nr. 143);

- (E)-2-{2-[3,5-dichloro-4-(3,3-dimethylbutoxy) phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide, (compound Nr. 144);

- methyl (E)-2-{2-[3,5-dichloro-4-(2,4-dichlorobenzyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate thick oil, (compound Nr. 145);

methyl (E)-2-{2-[3,5-dichloro-4-(4-chlorobenzyloxy)-phenoxymethyl]phenyl}-3-methoxyacrylate, solid with m.p. 112°C, (compound Nr. 146).

EXAMPLE 5

Determination of the acaricidal activity.

a) Activity against adults of *Tetranychus urticae*.

Samples of bean leaves are infested with adult female mites and sprayed, by means of a Potter Tower, with a hydro-acetone solution at 20% by volume of acetone, containing the product being tested at the desired concentration and Tween 20 (0.05%).

The mortality percentage is determined 48 hours after treatment, compared with that of adult mites, by infesting samples only treated with a hydro-acetone solution at 20% by volume of acetone (blank).

The compounds tested provided a full activity at a dose of 500 ppm.

b) Activity against eggs and larvae of *Tetranychus urticae*.

Samples of bean leaves, on which mite eggs were deposited 24 hours before, were sprayed by means of a Potter Tower with a hydro-acetone solution at 20% by volume

of acetone, containing the product being tested at the desired concentration and Tween 20 (0.05%).

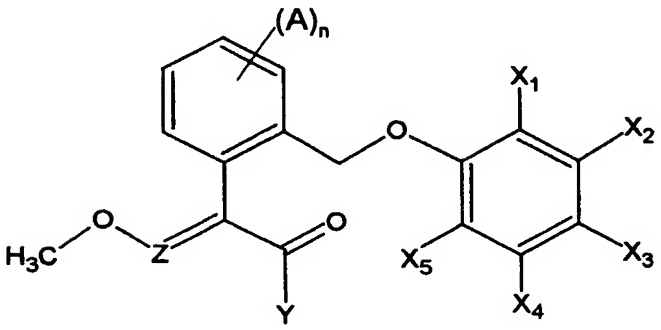
The percentage of unopened eggs is determined seven days after treatment, compared with that of eggs only treated with a hydro-acetone solution at 20% by volume of acetone (blank).

72 hours after examining the eggs, the mortality percentage of the larvae deriving from the treated eggs is evaluated and compared with that of the larvae deriving from the blank eggs.

The compounds tested provided a full activity at a dose of 200 ppm.

CLAIMS

1. Compounds having general formula (I)



(I)

wherein:

- a group selected from X_1, X_2 and X_3 represents an R group;

- X_4 and X_5 and two of the remaining X_1, X_2, X_3 groups represent a hydrogen atom or a halogen atom, on the condition that at least two of said groups represent a halogen atom;

- R represents a C_1-C_{12} alkyl or haloalkyl group; a C_1-C_{12} alkoxy or alkylthio group optionally substituted by halogen atoms, cyano groups, C_1-C_6 alkoxy groups optionally halogenated, C_2-C_{10} alkoxyalkoxy groups optionally halogenated, NH_2 groups optionally substituted by C_1-C_6 alkyl groups optionally halogenated, C_3-C_{12} trialkyl silyl groups, aryloxy or heteroaryloxy groups, in turn optionally substituted by halogen atoms, C_1-C_6 alkyl groups optionally halogenated, C_1-C_6 alkoxy groups optionally

halogenated, nitro groups, cyano groups; a C_2-C_{12} alkenyloxy or alkenylthio group optionally substituted by halogen atoms, cyano groups, aryl groups or heteroaryl groups, in turn optionally substituted by halogen atoms, C_1-C_6 alkyl, halo-alkyl, alkoxy, halo-alkoxy groups, nitro groups, cyano groups; a C_3-C_{12} alkinyloxy or alkinylthio group optionally substituted by halogen atoms, C_1-C_6 alkoxy or haloalkoxy groups, aryl or heteroaryl groups, in turn optionally substituted by halogen atoms, C_1-C_6 alkyl, haloalkyl, alkoxy, halo-alkoxy groups, nitro groups, cyano groups; a linear or branched C_3-C_{12} alkoxyiminoalkylidenoxy or alkoxyiminoalkylidenthio group; a C_3-C_8 cycloalkoxy or cycloalkylthio group optionally substituted by halogen atoms, C_1-C_6 alkyl, haloalkyl, alkoxy, haloalkoxy groups; a C_4-C_{12} cycloalkylalkoxy or cycloalkylalkylthio group optionally substituted by halogen atoms, C_1-C_6 alkyl, haloalkyl, alkoxy, haloalkoxy groups; a heterocyclyloxy, heterocyclylthio, heterocyclyl-(C_1-C_6)alkoxy or heterocyclyl-(C_1-C_6)alkylthio group, optionally substituted by halogen atoms, (C_1-C_6) alkyl, haloalkyl, alkoxy, haloalkoxy groups; an aryloxy, arylthio, hetero-aryloxy, heteroarylthio, aryl-(C_1-C_6)alkoxy, aryl-(C_1-C_6)alkylthio, heteroaryl-(C_1-C_6)alkoxy or heteroaryl-(C_1-C_6)alkylthio group optionally substituted by halogen atoms, C_1-C_6 alkyl groups optionally

halogenated, C_1-C_6 alkoxy groups optionally halogenated, nitro groups, cyano groups;

- A, the same or different, when n is greater than or equal to 2, represents a halogen atom or a C_1-C_4 alkyl, haloalkyl, alkoxyl, haloalkoxyl group;

- Y represents an OCH_3 group, an $NHCH_3$ group, an NH_2 group;

- Z represents a CH group or a nitrogen atom N;

- n is an integer ranging from 0 to 4.

2. The compounds according to claim 1, characterized in that they are an isomeric mixture in any proportion, or the isomer E or the isomer Z of the compounds having formula (I).

3. The compounds according to claim 1, characterized in that they are the isomer E of the compounds having formula (I).

4. The compounds according to claim 1, characterized in that X_3 represents an R group according to the above mentioned meanings, X_2 and X_4 represent a halogen atom, X_1 and X_5 represent a hydrogen atom and n is equal to 0.

5. The compounds according to claim 1, characterized in that they are selected from:

- methyl (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-3-methoxyacrylate;

- methyl (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophen-

oxymethyl)phenyl]-2-methoxyiminoacetate;

- (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-N-methyl-2-methoxyiminoacetamide;

- methyl (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-2-methoxyiminoacetate;

- (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate;

- (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)-phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate;

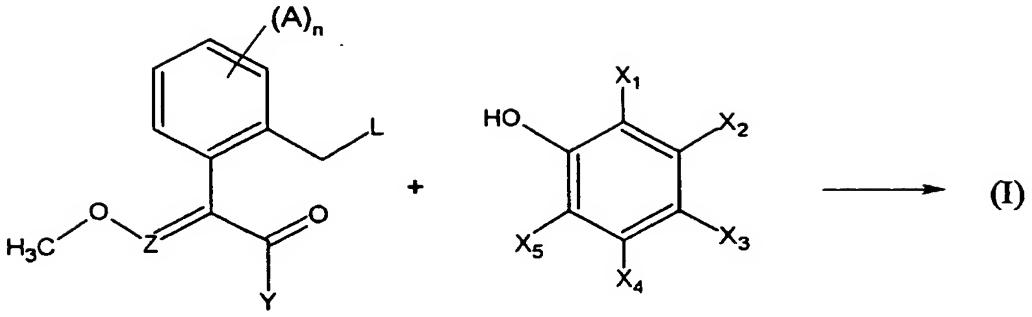
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate;

- (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;

- methyl (*E*)-2-[2-(4-cyclobutylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dimethylbutoxy)phenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-methylbutoxy) phenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-[2-(4-cyclohexylmethoxy-3,5-dichlorophenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(2,4-dichlorobenzyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(4-chlorobenzyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate.

6. The process for the preparation of the compounds having general formula (I), according to any of the claims 1-5, characterized in that it includes a condensation reaction of a compound having general formula (II) with a phenol having general formula (III), according to the reaction scheme 1:

Scheme 1



(II) (III) (I)

wherein , X_1, X_2, X_3, X_4, X_5, A, Y, Z and n have the meanings defined above, L represents a leaving group such as a chlorine atom, a bromine atom or a $R_LSO_3^-$ group wherein R_L represents a C_1-C_6 alkyl or haloalkyl, or a phenyl optionally substituted.

7. The process according to claim 6, characterized in that the reaction is carried out in an inert organic solvent, at a temperature ranging from 0°C and the boiling temperature of the reaction mixture, possibly in the presence of an inorganic or organic base.

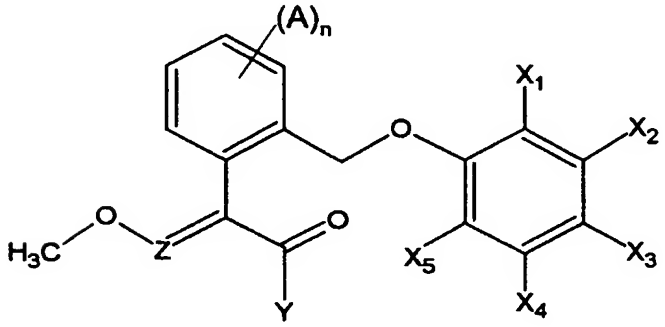
8. The process according to claim 7, characterized in that the solvent is selected from alcohols, ethers, esters, ketones, chlorinated hydrocarbons, aromatic hydrocarbons, aliphatic hydrocarbons, aprotic dipolar solvents.

9. The process according to claim 7, characterized in that the inorganic base is selected from hydrides, hy-

droxides, carbonates of alkaline or alkaline-earth metals.

10. The process according to claim 7, characterized in that the organic base is selected from pyridine, dimethylaminopyridine, aliphatic amines, cyclic amines, alcoholates of alkaline metals.

11. Use of the compounds having general formula (I)



(I)

wherein:

- a group selected from X_1, X_2 and X_3 represents an R group;

- X_4 and X_5 and two of the remaining X_1, X_2, X_3 groups represent a hydrogen atom or a halogen atom, on the condition that at least two of said groups represent a halogen atom;

- R represents a C_1-C_{12} alkyl or haloalkyl group; a C_1-C_{12} alkoxy or alkylthio group optionally substituted by halogen atoms, cyano groups, C_1-C_6 alkoxy groups optionally halogenated, C_2-C_{10} alkoxyalkoxy groups optionally halo-

genated, NH_2 groups optionally substituted by C_1-C_6 alkyl groups optionally halogenated, C_3-C_{12} trialkyl silyl groups, aryloxy or heteroaryloxy groups, in turn optionally substituted by halogen atoms, C_1-C_6 alkyl groups optionally halogenated, C_1-C_6 alkoxy groups optionally halogenated, nitro groups, cyano groups; a C_2-C_{12} alkenyloxy or alkenylthio group optionally substituted by halogen atoms, cyano groups, aryl groups or heteroaryl groups, in turn optionally substituted by halogen atoms, C_1-C_6 alkyl, haloalkyl, alkoxy, halo-alkoxy groups, nitro groups, cyano groups; a C_3-C_{12} alkinyloxy or alkinylthio group optionally substituted by halogen atoms, C_1-C_6 alkoxy or haloalkoxy groups, aryl or heteroaryl groups, in turn optionally substituted by halogen atoms, C_1-C_6 alkyl, haloalkyl, alkoxy, halo-alkoxy groups, nitro groups, cyano groups; a linear or branched C_3-C_{12} alkoxyiminoalkylidenoxy or alkoxyiminoalkylidenthio group; a C_3-C_8 cycloalkoxy or cycloalkylthio group optionally substituted by halogen atoms, C_1-C_6 alkyl, haloalkyl, alkoxy, halo-alkoxy groups; a C_4-C_{12} cycloalkylalkoxy or cycloalkylalkylthio group optionally substituted by halogen atoms, C_1-C_6 alkyl, haloalkyl, alkoxy, halo-alkoxy groups; a heterocyclyloxy, heterocyclylthio, heterocyclyl(C_1-C_6)alkoxy or hetero-cyclyl(C_1-C_6)alkylthio group, optionally substituted by halogen atoms, (C_1-C_6) alkyl, haloal-

kyl, alkoxy, halo-alkoxy groups; an aryloxy, arylthio, heteroaryloxy, heteroarylthio, aryl-(C_1-C_6)alkoxy, aryl-(C_1-C_6)alkylthio, heteroaryl-(C_1-C_6)alkoxy or heteroaryl-(C_1-C_6)alkylthio group optionally substituted by halogen atoms, C_1-C_6 alkyl groups optionally halogenated, C_1-C_6 alkoxy groups optionally halogenated, nitro groups, cyano groups;

- A, the same or different, when n is greater than or equal to 2, represents a halogen atom or a C_1-C_4 alkyl, haloalkyl, alkoxyl, haloalkoxy group;

- Y represents an OCH_3 group, an $NHCH_3$ group, an NH_2 group;

- Z represents a CH group or a nitrogen atom N;

- n is an integer ranging from 0 to 4;

as acaricides and/or insecticides and/or fungicides.

12. The use according to claim 11 of the isomers E of the compounds having formula (I).

13. The use according to claim 11, wherein X_3 represents an R group according to the above meanings, X_2 and X_4 represent a halogen atom, X_1 and X_5 represent a hydrogen atom and n is equal to 0.

14. The use according to claim 11, wherein the compounds of formula (I) are selected from:

- methyl (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-3-methoxyacrylate;

- methyl (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-2-methoxyiminoacetate;

- (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-N-methyl-2-methoxyiminoacetamide;

- methyl (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-2-methoxyiminoacetate;

- (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorphenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate;

- (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)-phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate;

- (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-tri-fluorobut-2-enyloxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyimino-

acetamide;

- methyl (*E*)-2-[2-(4-cyclobutylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-3-methoxyacrylate;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dimethylbutoxy) phenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-methylbutoxy) phenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-[2-(4-cyclohexylmethoxy-3,5-dichlorophenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(2,4-dichlorobenzyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(4-chlorobenzyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate.

15. The use according to any of the claims 11-14 for the control of adults, larvae and eggs of mites and insects which are harmful in the agrarian, civil and zootechnical field.

16. The use according to claim 15, wherein the harmful mites and/or insects are tetranychidae (*Tetranychus urticae, Tetranychus telarius, Tetranychus cinnabarinus, Eotetranychus carpini, Panonychus ulmi, Panonychus citri,* etc.), eriophyidae (*Phytoptus avellanae, Eriophyes vitis, Eriophyes piri,* etc.) tarsonemidae (*Steneotarsonemus pallidus,* etc.), hemiptera (*Macrosiphum euphorbiae, Aphis fabae, Myzus persicae,* etc.), lepidoptera (Spodoptera

spp., Heliothis spp., Chilo spp., *Carpocapsa pomonella*, etc.), coleoptera (*Leptinotarsa decemlineata*, *Phaedon cochleariae*, etc.), diptera (Aedes spp., Culex spp., Musca spp., etc.).

17. The use according to any of the claims 11-14 for the control of phytopathogenous fungi such as: Helminthosporium spp., Erysiphe spp., Puccinia spp., *Plasmopara viticola*, Pythium spp., Phytophthora spp., Rhynchosporium spp., Septoria spp., *Sphaerotheca fuliginea*, *Podosphaera leucotricha*, *Pyricularia oryzae*, *Uncinula necator*, Venturia spp., *Botrytis cinerea*, Fusarium spp., Alternaria spp., Cercospora spp.

18. The use according to any of the claims 11-14 for the control of mites, insects and fungi which are harmful in crops of agrarian and horticultural interest, on domestic and breeding animals, in environments frequented by human beings.

19. A method for controlling mites and/or insects and/or phytopathogenous fungi in crops of agrarian and horticultural interest, and/or on domestic and breeding animals, and/or in environments frequented by human beings, by the application of the compounds having general formula (I) according to one of the claims 1-5.

20. The method according to claim 19, characterized in that the quantity of compound to be applied varies from

10 g to 5 kg per hectare.

21. Acaricidal and/or insecticidal and/or fungicidal compositions containing as active principle one or more compounds having general formula (I) according to one of the claims 1-5.

22. The compositions according to claim 21, comprising other active principles compatible with the compounds having general formula (I), such as other acaricides/insecticides, fungicides, phyto-regulators, antibiotics, herbicides, fertilizers.

23. The compositions according to claim 21, characterized in that the concentration of active principle ranges from 1 to 90%, preferably from 5 to 50%.

INTERNATIONAL SEARCH REPORT

PCT/EP 03/03784

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C07C69/734 C07C259/10 A01N37/50 C07C67/343

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C07C A01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, CHEM ABS Data, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 145 980 A (LORENZ GISELA ET AL) 8 September 1992 (1992-09-08) column 1, line 5 -column 3, line 35	1-3, 6-12, 15-23
Y	table 1, compounds N°1.197 to 1.202 column 31, line 43 -column 33, line 54; claims 1-3	4,5,13, 14

X	US 5 545 664 A (KIRSTGEN REINHARD ET AL) 13 August 1996 (1996-08-13) column 10, line 1 - line 40 column 54, line 59 -column 55, line 15 column 66, line 35 -column 67, line 18	1-3, 6-12, 15-23
Y	table A, compounds n° A.1937-A.1958 column 84, line 33 -column 91, line 23; claims 1,4-10	4,5,13, 14

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
18 August 2003	27/08/2003

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Seelmann, M

Form PCT/ISA/210 (second sheet) (July 1992)

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 398 692 A (SHIONOGI & CO) 22 November 1990 (1990-11-22) cited in the application formula (I-3) on page 5; scheme 4 on page 13 claims 2,14-16	1-23

INTERNATIONAL SEARCH REPORT

PCT/EP 03/03784

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 1(part)
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 1(part)

The compounds of general formula (I) in claim 1 are defined such that for the parameter n equal or greater than 2, the radical A represents a halogen atom or a C1-C4 alkyl, haloalkyl, alkoxyl, haloalkoxyl group. The parameter n is an integer ranking from 0 to 4. For the case, wherein n = 1, no definition is provided for the radical A. There is no additional information provided in the description, which could allow to apprehend the extent of the protection sought for the radical A when n = 1.

Accordingly the search was performed only on those parts, which are supported, i.e. n = 0, 2, 3 or 4.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

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